

The Effect of Social Variables on the Career Aspirations of Indigenous Adults in New Brunswick

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Abstract

A recent survey of Indigenous peoples in New Brunswick by the Joint Economic Development Initiative Inc. (JEDI) collected data regarding social factors that influence career aspirations. These social variables included: gender, marital status, education level, social welfare dependency, and mobility. These variables were analyzed for their significant differences with career aspirations, measured by O*Net Job Zones. A final data set of 202 survey respondents was used for data analysis. The results aligned with Gottfredson's theory of compromise and circumscription as preparation showed a significant effect with career aspirations. Factors outside of that framework, including marital status, gender, social dependence, and mobility, were also analyzed. The findings showed that women participants had greater career aspirations than men, and that less mobile participants had higher career interests. Implications for Indigenous career development theory, future research, and career counselling are discussed.

Résumé

Un sondage effectué récemment auprès des Peuples Autochtones du Nouveau-Brunswick par l'organisation Joint Economic Development Initiative Inc. (JEDI) a recueilli des données à l'égard des facteurs sociaux qui influencent les aspirations de carrière. Ces variables

sociales incluent : le genre, l'état matrimonial, le niveau d'éducation, la dépendance envers l'assistance sociale et la mobilité. Ces variables ont été analysées afin d'identifier des différences significatives à l'égard des aspirations de carrière mesurées par O*Net Job Zones. Un ensemble final de données de 202 répondants a été utilisé pour l'analyse des données. Les résultats s'alignent avec la théorie de Gottfredson du compromis et de la circonscription puisque la préparation a démontré un effet significatif envers les aspirations de carrière. Certains facteurs externes à ce cadre, incluant le statut matrimonial, le genre, la dépendance envers l'assistance sociale et la mobilité, étaient également analysés. Les résultats ont démontré que les femmes qui ont participé possèdent de aspirations de carrières plus élevées que celles des hommes, et que les participants moins mobiles avaient des aspirations de carrière plus élevées. Des implications à l'égard des théories du développement de de carrière des autochtones, les recherches futures et l'orientation professionnelle sont discutées.

Keywords: Canadian Indigenous peoples, career aspirations

Introduction

Indigenous peoples living in New Brunswick are a part of a national population that is young and growing rapidly (Kelly-Scott & Smith, 2011). In contrast, the

Atlantic provinces face the reality of an aging workforce and a looming skills shortage (Department of Post-Secondary Education, Training and Labour, 2013). While this represents an opportunity for Indigenous youth and adults to fill the void in the workforce, employment statistics show that significant challenges also exist. Indigenous employment rates in New Brunswick significantly lag behind those of the non-Indigenous population (Department of Post-Secondary Education, Training, and Labour, 2013). Career aspirations have been identified as a key predictor of career attainment (Schoon & Polek, 2011). Considering the lower employment rates of Indigenous peoples in New Brunswick and the importance of having career aspirations to employment, we were interested in exploring the influence that a number of relevant social variables had on the development of career aspirations in Indigenous adults in New Brunswick.

Theoretical Framework

Rojewski (2005) defined career (occupational) aspirations as "expressed career-related goals or choices" (p. 132). Benjamin, Domene and Landine (2014) described career aspirations as "the process by which young people determine their goals while they are transitioning into adulthood" (p. 49). While this topic "has probably received as much attention as any other career-related concept" (Rojewski, 2005, p. 131), many prevalent career

development theories have not fully defined the concept. This study used Gottfredson's theory of circumscription and compromise as a theoretical framework to conceptualize career aspirations through a social psychological lens.

Gottfredson's (1981) theory links career aspirations with internal and external factors such as self-concept, social class, intelligence, and gender. As individuals emerge from childhood, a process of circumscription and compromise occurs, in which childhood career aspirations are discarded and replaced by careers deemed more accessible. Theoretically, individuals filter their aspirations based on the perceived prestige, preparation requirements, employment opportunities, and the congruence of the career with their self-concept and personal view of gender roles (Junk & Armstrong, 2010).

Gottfredson (1996) amended her theory after finding conflicting research results, to "include a set of conditional priorities for the compromise process based on the severity of the compromise being made" (Junk & Armstrong, 2010, p. 581). For major compromises, defined as a choice between two equally unacceptable careers, gender role becomes the most important factor in career decision-making. Minor compromises do not challenge the individual's views regarding gender roles and prestige. In these cases, the person's interests will be the most influential factor in the career decision-making process (Junk & Armstrong, 2010). Existing research has shown at least partial support for Gottfredson's theory in populations in North America (Cochran, Wang, Stevenson, Johnson, & Crews, 2011; Junk & Armstrong, 2010) and South Korea (Hwang, Kim, Ryu,

Heppner, 2006). To our knowledge, there is no research examining Gottfredson's theory in relation to Indigenous peoples living in Canada that has been published. Gottfredson's theory was chosen as the theoretical framework for this research because it presented the most comprehensive theory of career aspirations that could be used to conceptualize the outcome variable of the current research. This theoretical model may not apply to Canadian Indigenous peoples in Canada, but an Indigenous model of career aspirations has not yet been developed to use in research. This research assessed some aspects of Gottfredson's theory for its application to Indigenous peoples living in New Brunswick.

Influences on Career Aspirations

Based on research in Thailand (Koul, Lerdpornkulrat, & Chantara, 2011), Britain (Schoon & Polek, 2011), the United States (Perry, Przybysz, & Al-Sheikh, 2009), and Atlantic Canada (Tucker & Fushell, 2013), a gender gap has shown high career aspirations among women. This is supported by Howard et al. (2011), who stated, "Native American youth – especially boys and youth from low SES backgrounds – were more likely than their peers to identify occupations of lower prestige, requiring less education, and yielding lower incomes" (p.108). However, the realization of these women's aspirations is affected by cultural and social factors. Unique cultural and social factors also exist between Canadian Indigenous communities in Canada (Alfred, 2009; McCormick & Honore, 1995), therefore the relationship between gender and career aspirations in the Indigenous

communities in New Brunswick was expected to be equally unclear and not easily explained using similar research results from other Canadian communities.

Preparation requirements (i.e. training and education) for a career have also been considered in relation to Indigenous employment. Indigenous educational attainment rates trail the rest of the province: 34.5% of the population will not complete high school, compared to 24.6% of the non-Indigenous population; 16.4% will complete a college diploma, compared to 18.8% of the non-Indigenous population; and, 8.7% will attain a university degree, compared to 15.5% of the non-Indigenous population (Department of Post-Secondary Education, Training, and Labour, 2013). Employment and education are correlated, as a recent study by TD Bank found, stating that, "higher levels of Aboriginal educational attainment do translate into higher income levels and better labour market outcomes" (Fong & Gulati, 2013, p. 1). This confirms previous research in Canada that showed a direct link between education attainment and employability of Indigenous peoples (Bruce, Marlin, & Doucette, 2010; White, Maxim, & Gyimah, 2003). As Indigenous people become more educated, their rate of employment increases. Offet-Gartner (2008) found that education was perceived as a key to unlocking the door to career opportunities for Indigenous women in Western Canada. Indigenous youth in Alberta are willing to work hard and go where they have to in order to realize their career aspirations, however, they "are not lining up at the same starting line" when it comes to education (Bibby 2010, p. 59). Roness and Collier (2010) confirmed the

importance of education in building Indigenous workforce participation in Atlantic Canada. While the existing research defines a relationship between education and employability, little is known of the relationship between education and the career aspirations of Indigenous Peoples in Canada.

Social welfare dependency is a term that has been used in the literature to refer to those who are receiving any form of income assistance from the government (Andersen, 2015), such as employment insurance or social assistance. According to the literature, social welfare dependency may have a limited effect on career aspirations. Kregel (2009) found that socially dependent individuals in the United States “engaged in employment goals, vocational training, or job-seeking activities”, but faced barriers to achieving their aspirations, such as, disability and fears over loss of benefits (Kregel, 2009, p. 3). Ying and Michalopoulos (2001) studied social welfare dependency in New Brunswick, Canada, and also found that health issues and disability hindered the attainment of existing career aspirations for socially dependent people. No literature was found that directly measured the effect of social welfare dependency on career aspiration level; however, low preparation careers are more accessible and offer the least number of barriers for social welfare clients. Therefore, if Gottfredson’s theory were applied to social welfare clients, it can be hypothesized that clients who are dependent on social programs (i.e. employment insurance, social assistance) would have lower career aspirations than those who are not

dependent on those programs. The research described here explored this relationship in the Indigenous peoples in New Brunswick.

In addition to the career-related factors defined by Gottfredson (1981), marital status and mobility may also play a role in the career aspirations of Indigenous peoples in Canada. Research in the United States found that married individuals generally earn a higher salary, are promoted slightly more often, and have slightly higher levels of career satisfaction (Ng et al., 2005). Recent Canadian research also suggests that romantic relationships play a role in facilitating career decision-making, career advancement and raising income levels (Brosseau, Domene, & Dutka, 2010; Domene et al., 2012; Mitchell, 2014). However, the potential relationship between marital status and career aspiration remains unexplored within the Indigenous population in Canada.

Turcotte and Weeks (2014) discussed how labour mobility in the trades is being used as a strategy to reduce regional labour market strains. In their research, they did not find differences in rates of mobility based on participants’ education levels. Delisle and Shearmur (2010) found that Canadian university graduates consider movement within a certain region to be less of an obstacle than their non-university counterparts. However, both groups are less mobile across large distances. Their research focused on the relocation patterns of Alberta residents and the general Canadian population, and these results do not necessarily apply to the Indigenous peoples in New Brunswick. Arkwright-Alivisatos (1997) found that role models and family, as well as a desire

to benefit their own community, were positive influencers on career achievement for Indigenous adults in Atlantic Canada. This finding has been confirmed by more recent research, which revealed that community attachment was a factor in the employment outcomes of Indigenous peoples in Atlantic Canada (Bruce, Marlin, & Doucette, 2010). Indigenous peoples in Atlantic Canada are generally unwilling to relocate and work outside of their community. This could indicate that mobility is also a limiting factor on the career aspirations of this population.

Present Study

The present research added to the emerging body of Indigenous career development literature by examining the effect of social variables on the career aspirations of New Brunswick Indigenous adults in New Brunswick. Career development amongst Indigenous peoples in Canada is an area of study in which several questions remain (Spowart & Marshall, 2015). Spowart and Marshall (2015) recently conducted a qualitative study of supports, challenges, and obstacles that Indigenous men faced in British Columbia, and found that participants’ culture and relatives had a significant impact on their career success.

McCormick and Amundson (1997) developed the First Nations career-life planning model, which focused on key components in career exploration, such as: connectedness, balance, needs, roles, gifts, skills, and values. This model was tested on Indigenous youth in British Columbia, and was effective as a career exploration tool with this group (Neumann et al., 2000). As a career exploration tool, there

was little to be gleaned in regards to career aspirations; however, similar themes related to community connectedness may emerge in the present study.

In addition to this research, other relevant studies have revealed the presence of career goal-setting in American Indians (Juntunen et al., 2001); family and financial strains as a limiting factor to career aspirations of Navajo Indian high school graduates (Jackson & Smith, 2001; Hoffman, Jackson, & Smith, 2005); and, geographic isolation as a barrier to transitioning from post-secondary education into the labour market (Merrill, Bruce, & Marlin, 2010).

There are unique factors that differentiate the Indigenous population in New Brunswick from Indigenous Nations in Western Canada or the United States, such as a smaller population, a different economic climate, and a distinct cultural heritage. Arkwright-Alivisatos (1997) conducted research on aspects of career development in the Indigenous population in Atlantic Canada and found that role models, family, and community attachment aid their career development process. Recent non-academic literature also draws attention to the role of career awareness and community attachment in career development (Bruce, Marlin, & Doucette, 2010; Dragonfly Solutions, 2011; Roness & Collier, 2010); however, this has not been explored in depth in regard to the Indigenous population in New Brunswick. While there has been some career development research conducted in Atlantic Canada, there are also major gaps in the literature with regard to this population, and a lack of quantitative analyses to identify statistically significant differences in the career aspirations of

Indigenous adults in the region. The current research sought to correct these deficits in the literature.

The current study examined the relationship between career aspirations and social variables addressing the research question: How does gender, marital status, education level, mobility, and social welfare dependency affect career aspirations for Indigenous peoples living in New Brunswick?

Methods

This study used a secondary analysis of an existing, anonymized data set using a cross-sectional design to assess factors that relate to career aspirations in a sample of Indigenous people in New Brunswick ($n = 292$). The study was designed to identify significant differences in the career aspiration levels of sub-groups of Indigenous adults from New Brunswick through a series of t-tests and a one-way analysis of variance (ANOVA).

Castellano (2004) proposed guiding principles for research with the Indigenous communities in Canada, including the following principle: "Aboriginal Peoples have an inherent right to participate as principals or partners in research that generates knowledge affecting their culture, identity, and well-being" (Castellano, 2004, p. 109). This was reiterated by Ermine, Sinclair and Jeffery (2004), who expressed the need for Indigenous ownership and control of any research with Indigenous peoples. The Joint Economic Development Initiative Inc. (JEDI), an Indigenous non-profit organization, in collaboration with the nine Mi'gmaq and six Wolastoqiyik communities of

New Brunswick, performed the original survey development and implementation. Therefore, the necessary condition of Indigenous participation in all phases of the research exists, including the analysis that was completed by an Indigenous researcher from one of the surveyed communities in New Brunswick (Ermine, Sinclair, & Jeffery, 2004).

The results of the research conducted by JEDI will benefit Indigenous peoples in New Brunswick through advocacy that influences government, First Nations, and post-secondary institutions to enhance education, training and career development services for Indigenous peoples in New Brunswick. Data used in this research has been anonymized in order to protect and respect the privacy of individual survey participants. The present research was aligned with the Tri-Council Policy Statement regarding Ethical Conduct for Research Involving Humans.

Participants and Data Collection

In April 2014, various partners, including Aboriginal Affairs and Northern Development Canada (AANDC), Aboriginal Affairs Secretariat (AAS), Irving Shipbuilding, New Brunswick Aerospace and Defense Association, Saint John River Valley Tribal Council, Mawiw Tribal Council, North Shore Micmac District Council, New Brunswick Aboriginal Peoples Council, and New Brunswick Building & Construction Trades Council, engaged the Joint Economic Development Initiative Inc. (JEDI) to develop a provincial Shipbuilding Aboriginal Engagement Strategy.

This strategy was intended to maximize the economic benefits to the Indigenous community of New Brunswick stemming from the \$30 billion shipbuilding contract that was awarded to Irving Shipbuilding Inc. in 2013. In September 2014, the JEDI hired researchers from each Indigenous tribal council in the province to collect survey data at the community level. The survey was also made available online from April to October 2015. A human resources database was compiled from the data collected from September 2014 to October 2015, allowing JEDI to form a picture of the Indigenous work force in the province as it related to the Irving Shipbuilding project. The JEDI granted access to the data, in anonymized form, for the present study. The results of the analysis remain the property of JEDI and have been published with their permission.

The number of survey participants available for analysis was $n = 292$. However, due to the patterns of missing data, the number of participants for the t-tests ranged from $n = 193$ to $n = 201$, and the number of participants for the ANOVA was $n = 200$. All of these sample sizes meet the power requirements to conduct t-tests on dichotomous variables and a one-way ANOVA. Power calculations with an alpha of .05, anticipated power of .80 and a medium effect size revealed that the minimum sample size for the t-tests was 34 and the minimum sample size for the one-way ANOVA was 180.

Measures

Career aspirations. In this research, the outcome (dependent)

variable was career aspirations, operationalized using the O*Net Job Zone levels. O*Net is the primary source of occupational information in the United States, containing the characteristics of over 1,000 occupations in a hierarchical model (Levine, 2003). The Job Zones in O*Net “indicate level of training, education, and experience required to gain employment in the various O*NET occupation:” and the levels are assigned a numerical standing ranging from 1 to 5 (Levine, 2003, p. 81). A score of one is an aspired occupation that requires little or no preparation (in terms of training and education), while a score of five is given to career aspirations that require completion of graduate school along with an abundance of skill, knowledge, and experience in the workplace. While these Job Zones are often not useful in cross-industry analysis, they demonstrate usefulness as “prediction tools within the realms of occupational aptitude and training/education/experience (i.e. Job Zone) requirements” (Levine, 2003, p. 83). They have proven to be an effective measure of career aspirations in the United States, Australia, and Canada (Watt et al., 2012).

The outcome variable was coded based on the occupations reported in response to the question: “What career are you interested in?” Participant responses were coded on a scale from 1 to 5, based on their place in the O*Net Online Job Zones. Vague responses that did not indicate specific occupations were coded as missing data.

Independent variables. All independent variables were coded from participants’ self-reported

responses to relevant survey questions. The six independent variables that were examined are:

- 1. Gender:** A dichotomous variable consisting of two distinct answers: male (1) or female (0).
- 2. Marital Status:** A dichotomous variable with numbers representing: single (1) or not single (0).
- 3. Social Welfare Dependence:** A dichotomous variable consisting of two responses: Yes (1) or No (0).
- 4. Willing to Relocate:** A dichotomous variable consisting of two distinct answers: Yes (1) or No (0).
- 5. Highest Level of Education Achieved:** This categorical variable originally consisted of five groups: less than high school (1); high school diploma or equivalent (2); community college diploma, vocational school (3); university degree (4); graduate degree or above (5). However, there were no participants with an education level of “5” in the final sample.

Procedures

Survey responses were coded by the researchers. A series of independent samples t-tests explored how each of the dichotomous independent variables relates to the outcome variable, career aspirations. A one-way ANOVA was conducted to explore the relationship between education and career aspirations.

Results

Preliminary Analyses

Prior to testing the hypotheses, it was necessary to

conduct preliminary analyses to determine whether the variables met the assumptions for conducting t-tests and ANOVAs. The outcome variable was reviewed for outliers and all scores fell within three standard deviations of the mean. Probability-probability (P-P) plots indicated a normal distribution of the outcome variable.

Furthermore, central limit theory indicated that the sample size was sufficiently large that normality could be assumed (Field, 2013). Furthermore, the non-significant Levene's test results suggested that the assumption of heterogeneity of variances had been met.

Hypothesis 1: An independent samples t-test was conducted to compare career aspirations of male ($n = 132$) versus female ($n = 69$) participants. On average, males reported lower career aspirations ($M = 2.73$, $SE = .068$) than females ($M = 3.13$, $SE = .103$). The difference, -0.396 , was significant $t(199) = -3.300$, $p = .001$; and represented a small effect size, $d = -.463$. These results supported Hypothesis 1 and suggest that Indigenous women have slightly, but significantly, higher career aspiration levels than their male counterparts.

Hypothesis 2: An independent samples t-test was conducted to compare career aspirations of single ($n = 166$) and not single ($n = 32$) participants. On average, single participants did not have significantly different career aspirations ($M = 2.90$, $SE = .064$) than those who were not single ($M = 2.78$, $SE = .154$). The difference, $.122$, was not significant $t(196) = .767$, $p = .444$; and represented an effect size of $d = .140$. These results failed to support Hypothesis 2.

Hypothesis 3: An independent samples t-test was conducted to compare the career

aspirations of participants who were dependent on social welfare ($n = 126$) and those who were not ($n = 76$) at the time of the survey. On average, those who were socially dependent reported lower career aspirations ($M = 2.75$, $SE = .069$) compared to those who were not socially dependent ($M = 3.07$, $SE = .100$), and the difference, $-.312$, was significant $t(200) = 2.642$, $p = .009$. Social welfare dependency demonstrated a small but significant negative effect size of $d = -.368$. These results support Hypothesis 3.

Hypothesis 4: An independent samples t-test was conducted to compare career aspirations of participants who were willing to relocate ($n = 171$) compared to those who were not ($n = 26$). On average, those who were willing to relocate reported lower career aspiration levels ($M = 2.82$, $SE = .061$) compared to those who were not willing ($M = 3.19$, $SE = .167$). This difference, $-.368$, was significant $t(195) = -2.167$; and represented an effect of $d = -.433$. Although these results were significant, they are in the opposite direction to what was hypothesized, and suggest that willingness to relocate has a significant negative effect on career aspiration levels.

Hypothesis 5: A one-way analysis of variances (ANOVA) was conducted to compare career aspirations of participants, conceptualized by O*Net Job Zone level, to the different levels of education actually completed by participants. There was a significant effect for education on career aspirations, $F(3, 196) = 8.664$, $p = .000$, $\omega^2 = .117$. Hochberg's GT post hoc test scores indicated that those with a high school diploma or less had significantly lower aspirations than those with some form of post-secondary

education (PSE). In addition, there is no significant difference between people with less than high school versus people with a high school diploma and no significant difference between people with a college versus university degree. These results support Hypothesis 5 and suggest that education level has a medium to large effect on career aspirations, with the division being between those who had completed some form of post-secondary education and those who had not completed some form of post-secondary education (Table 1).

Discussion

To summarize the results, gender demonstrated a small effect on career aspirations. Current education level was hypothesized to have a significant effect on career aspirations, and this result was confirmed in the analysis. This represents a medium to large positive effect, meaning that as the education level of respondents increased, the education level of the career aspired to also increased. Specifically, the career aspirations of post-secondary education graduates were significantly higher than those with no post-secondary education. Participants currently in a romantic relationship were hypothesized to have higher career aspirations than the single participants. This hypothesis was not supported by the analysis; generally speaking, single and non-single respondents had similar career aspiration levels. Social welfare dependency was hypothesized to demonstrate a negative effect on career aspirations. The analysis revealed that those who were not currently dependent on social welfare programs aspired to careers that required more preparation (i.e. training and

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Table 1

Post-hoc test: Hochberg's GT

(I) Level of Education Completed	(J) Level of Education Completed	Mean Difference (I-J)	Std. Error	Sig.
Less than high school	High school diploma or equivalent	-.196	.135	.617
	Community college diploma, vocational school	-.578*	.151	.001
	University degree or above	-1.004*	.248	.000
High school diploma or equivalent	Less than high school	.196	.135	.617
	Community college diploma, vocational school	-.382*	.140	.041
	University degree or above	-.808*	.242	.006
Community college diploma, vocational school	Less than high school	.578*	.151	.001
	High school diploma or equivalent	.382*	.140	.041
	University degree or above	-.426	.251	.431
University degree or above	Less than high school	1.004*	.248	.000
	High school diploma or equivalent	.808*	.242	.006
	Community college diploma, vocational school	.426	.251	.431

*The mean difference is significant at the 0.05 level.

education) than current dependents. Participants willing to relocate were hypothesized to have higher career interests than those who were not mobile (measured by their willingness to relocate). This was disproven by the data. Instead, those who were unwilling to move actually had higher career aspirations than those who were willing to move, although the effect size was small.

The findings of this research are intriguing in the context of Gottfredson's (1981) theory of circumscription and compromise. Gender, social welfare dependency, and education had significant effects on the career aspirations of the participants. The largest effect that emerged was the effect of education level on career aspirations, particularly in regard to PSE attainment. Social welfare dependency was a limiting factor in relation to career aspirations. This finding aligns with Gottfredson's theory as careers that require less preparation are viewed as more accessible for those participants dependent on social welfare. Additionally, gender and career aspirations were significantly correlated as women tended to aspire to careers that require slightly more preparation than males, confirming the literature that suggests women aspire to careers that require more long-term preparation than men (Howard et al., 2011; Koul, Lerdpornkulrat, & Chantara, 2011; Perry, Przybysz, & Al-Sheikh, 2009; Schoon & Polek, 2011; Tucker & Fushell, 2013). The underlying cultural factors that influence this finding, such as gender roles in First Nations, should be explored in future research (Alfred, 2009; McCormick & Honore, 1995).

Apart from the variables connected to Gottfredson's (1981) theory, the results here seem to contradict previous research suggesting that mobility was a hindrance to career development in Indigenous peoples in Atlantic Canada (Bruce, Marlin, & Doucette, 2010; Roness & Collier, 2010). Nearly 85% of respondents indicated a willingness to relocate, but willingness to relocate decreased as career aspirations increased. Although this result was the opposite of what was hypothesized, it does seem to align with another aspect of the existing literature. In general, Indigenous peoples living in Atlantic Canada value giving back to their community (Arkwright-Alivisatos, 1997). Arkwright-Alivisatos (1997) referred to "the narrow path", indicating that community is a key factor in limiting career aspirations to those occupations which are perceived as giving back to the community, such as social work, teaching, nursing, and policing (p. 69). Each of these careers requires a high level of preparation (i.e. more training and education) and is classified in higher Job Zones. Therefore a lack of mobility may negatively influence employment outcomes while positively influencing career aspirations. The desire to give back to the community might explain the results, but worker mobility should be explored more thoroughly to determine specific factors that affect Indigenous peoples in New Brunswick. Finally, the results suggested no statistical relationship between marital status and career aspiration level, confirming the existing literature (Brosseau, Domene, & Dutka, 2010; Domene et al., 2012), which also found no significant association between these two variables.

Implications for Career Counselling

The results of the current study confirmed the importance of preparation for future careers, as education had a medium-to-high sized effect on career aspirations. This is an important finding, especially for guidance counsellors working with Indigenous students in schools. A strategy of encouraging Indigenous youth to advance their education beyond high school and into post-secondary (e.g., trades, community college, and university) is likely to result in higher career aspirations for future generations, leading to greater employment outcomes. However, the distinction between different types of PSE appears to be less important. No significant difference was found between the career aspirations of participants who completed community college/vocational school and the aspirations of participants who had completed a university degree. For practitioners working with adults in Indigenous communities (e.g., employment and training officers, education directors), it is important to note that adult clients will benefit from opportunities to advance their education through GED programs, specialized training, and the completion of post-secondary diplomas and degrees. The message here for practitioners is that they should encourage clients to pursue their educational options and provide information regarding the educational requirements for individual career aspirations.

Willingness to relocate has historically presented a challenge for Indigenous career development in Canada. Numerous studies have stated that community attachment is a key factor in Indigenous career

decision-making (Arkwright-Alivisatos, 1997; Bruce, Marlin, & Doucette, 2010; McCormick & Honore, 1995; Roness & Collier, 2010). The results of the current research were intriguing, as 85% of participants reported a willingness to relocate for work. One mitigating factor that might explain this phenomenon is that the survey data was collected with a regional connection to shipbuilding (an industry that is not located in any of the Indigenous communities that were surveyed). Therefore, career counsellors and employment and training officers should consider career opportunities across Atlantic Canada while working with clients. Another explanation for the relocation findings could be in relation to the marketing of the survey to the communities. The survey process was implemented to connect people with employment opportunities, making it attractive to participants who were actively interested in employment and omitting those who were already employed or who were not actively seeking work. Neither of those groups would likely be willing to relocate, but the group for which this survey was designed was likely willing to do so out of motivation to find work.

Dependence on social programs was found to have a significant negative effect on career aspirations. This is informative for career counsellors working with clients who are recipients of both short-term (EI) and long-term (social assistance) social programs. Dependency on these programs does not indicate a lack of career aspirations (Kregel, 2009); however, it may limit those clients' aspirations to careers that require less preparation. The First Nations Career Planning Model (McCormick

& Amundson, 1997; McCormick et al., 1999; Neumann et al., 2000) should be used in working with these clients to explore realistic career goals and outline a plan of action to achieve those goals.

Implications for Indigenous, Federal, and Provincial Governance

The results of this research demonstrate a willingness on the part of Indigenous peoples to participate in the Atlantic Canadian workforce. The Indigenous workforce surveyed in this study aspired to having careers and was willing to relocate to achieve their career aspirations. Post-secondary educational achievement, mobility, and gender were identified as significant factors influencing career aspirations in this population. Strategic investments to support Indigenous peoples to attain post-secondary education, transition into the workforce, and relocate for career advancement will result in improved employment and social outcomes for Indigenous peoples in New Brunswick.

Limitations

The current study used archival data, which limited the scope of the research to the data that was available in the survey and did not allow the exploration of additional variables that the literature suggested could be important. Some factors that have been shown to influence career aspiration level in other populations (i.e. age, community affiliation, disability) and may have been important to examine for Indigenous peoples in New Brunswick could not be included because the required data was not

collected as a part of the existing survey process.

Additionally, the quality of responses to some of the survey questions limited the effectiveness of the research in fully exploring the factors related to aspiration. For example, some participants gave clear indication of their career aspirations while others were more vague. Those vague responses were omitted from the analysis, which means that the results do not generalize to individuals without clear career aspirations. The generalizability of the results is also questionable because the survey was related to the shipbuilding industry, potentially discouraging participation from those with education and training in other sectors. This could be the reason that no individuals with graduate degrees or above participated in the survey. This also may have encouraged some participants to respond in a way that could make them attractive to the shipbuilding industry (e.g., stating that they would be willing to relocate to where such employment is located; naming career aspirations that are consistent with shipbuilding).

The measure of career aspirations, O*Net Job Zones, is a measure designed for the United States (Levine, 2003). There may have been some careers included where preparation requirements differ between the United States and Canada, and this could have skewed the data slightly, depending on certification differences between countries. This skewing is likely not drastic enough to significantly influence the results, as evidenced by Watt et al. (2012) who used the same measure to compare the career aspirations of populations in Australia, the United States, and Canada.

Finally, Gottfredson's theory of circumscription and compromise has been tested in the United States, Canada, and South Korea, but unique cultural aspects of Indigenous communities may limit its validity in this context (Cochran, Wang, Stevenson, Johnson, & Crews, 2011; Hwang, Kim, Ryu, Heppner, 2006; Junk & Armstrong, 2010; McCormick & Honore, 1995). One of the outcomes of the research was to test Gottfredson's theory in an Indigenous context. The results confirmed the effect of preparation and education on career aspirations in Indigenous communities; however, further research is required to confirm this finding and test additional elements of Gottfredson's theory in an Indigenous context.

Future Research

Future research topics must be determined in consultation with the Indigenous community, but could include: factors that facilitate greater educational attainment, Indigenous culture and gender roles, the effect community attachment has on career aspirations and development, and successful counselling strategies for increasing Indigenous educational and career achievement. Consultation with communities may reveal different priorities than those listed here. Such consultation is necessary in building collaborative research directions whereby Indigenous peoples in Atlantic Canada can continue to research our selves "back to life" (Castellano, 2004, p. 98).

There is a dearth of knowledge about the factors that influence career aspiration level in the Indigenous population of Atlantic Canada, and New Brunswick specifically. The current study represents a starting point for

research on this topic. Additional research should thoroughly explore the application of Gottfredson's (1981) theory of compromise and circumscription to Indigenous peoples to address questions as to whether or not this is an appropriate lens for understanding their career aspirations. It would also be informative to explore the interconnectedness of Gottfredson's theory of career aspirations and the First Nations career-life planning model (McCormick & Amundson, 1997; Neumann et al., 2000).

The findings of this research determined that women participants had higher career aspirations than males. This needs to be explored more fully to determine the cultural factors and gender roles that underlie this finding, and explore strategies to advance the career aspirations of Indigenous men and women in New Brunswick. Mobility is another area of research focus for future consideration. The findings of this research were unexpected, and further research is needed to confirm these findings and determine factors that impact worker mobility and career aspirations in Indigenous peoples living in New Brunswick. Additional factors that have been shown to effect career development (age, social status, disability) were neglected in this analysis due to the archival data set. Additional research is required to measure the impact of these and other additional variables, including those related to revitalization and self-determination, on the career development of Indigenous peoples in New Brunswick.

The career aspirations of Indigenous students in New Brunswick are also in need of further investigation. Research conducted in Australia found that "Indigenous students tended to set

their schooling and post-schooling aspirations at lower levels compared with their non-Indigenous peers" (Craven et al., 2005, p. 142). Numerous challenges to higher career aspirations were faced by the participants in that study, including knowledge of career opportunities, lack of family support, awareness of what education or training is needed to pursue their career aspirations, better education facilities, local job opportunities, and employer attitudes towards indigenous people (Craven et al., 2005). These factors may also affect the Indigenous students of New Brunswick. The present research explored the career aspirations of Indigenous adults. In contrast, future research should explore the career aspirations of Indigenous students and could compare them with non-Indigenous students in New Brunswick.

The findings regarding social welfare clients can also inform future research. Social welfare dependency had a significant negative effect on career aspirations. Future research should explore the underlying factors that limit employment and career outcomes for these clients. It should also provide recommendations for overcoming barriers to career development. This data could have a great impact on the provincial economy, as clients are empowered to succeed and become less dependent on social welfare.

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